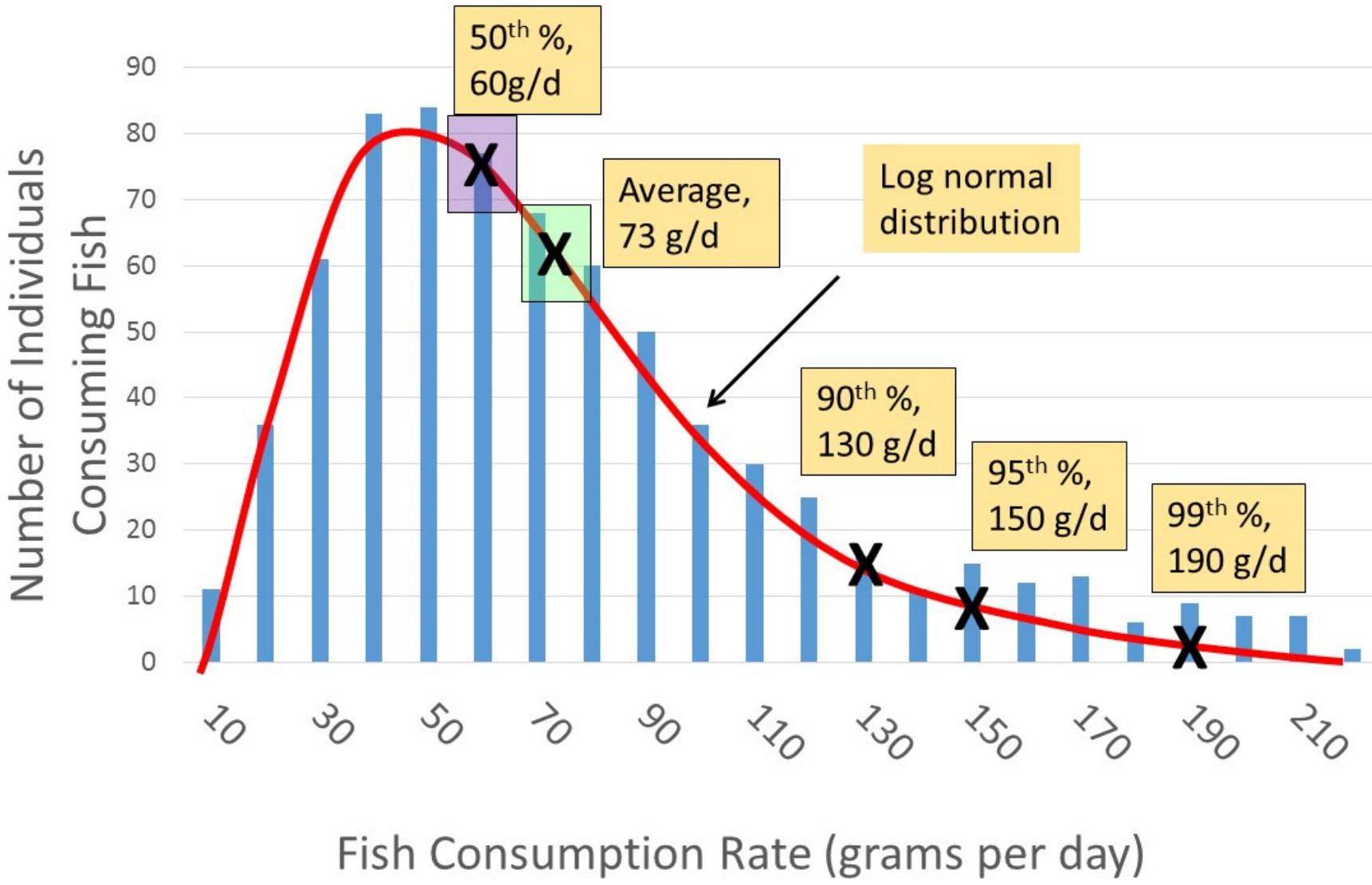
A major issue not noted in your presentation has been inclusion of migratory species in the FCR. Another issue I see that is unique to Alaska is consumption of marine mammals.

Slide 4: Presume you're citing the national FCR and what it will equal in terms of meals or ounces?

Slide 6: Presume you mean "data" and not "date?"

Slide 8: Although this is useful in illustrating the nature of the statistical metrics used to characterize FCRs, FCR distributions are usually right skewed, not normal distributions. Frequently FCRs are characterized using the log normal distribution. Here's a slide I used:


50th %, 60g/d
Average, 73 g/d
Log normal distribution
90th %, 130 g/d
95th %, 150 g/d
99th %, 190 g/d
Number of Individuals Consuming Fish
0
10
20
30
40
50
60
70
80
90
10
30
50
70
90
110
130
150
170
190
210
Fish Consumption Rate (grams per day)

Slide 9: Issues of how to treat non-consumers are particularly an issue when attempting to develop estimates of usual fish consumption from short term dietary recall data. This was an issue for previous analyses of national data. EPA's recent re-analysis of short term dietary recall national data using a modeling approach by the National Cancer Institute has addressed this problem. SEE: http://water.epa.gov/scitech/swguidance/fishshellfish/fishadvisories/upload/Estimated-Fish-Consumption-Rates-for-the-U-S-Population-and-Selected-Subpopulations-NHANES-2003-2010.pdf

This isn't as much of an issue for data obtained using food frequency questionnaire approaches.

Slide 10: Suppression is multifaceted. In addition to the points you noted, factors related to suppression include:

1. Reduction in fish consumption from historic rates due to a variety of causes.
2. Fears of chemical contamination
3. Reduced fish populations due to loss of habitat or chemical contamination
4. Changes in social structure such that harvesting is reduced
5. Loss of access to fishing locations
6. Laws or regulations restricting fishing
7. Inadequate fishing gear

The key point regarding suppression is that we don't want to use suppressed fish consumption rates to compute ambient water quality criteria that maintain the status quo of a degraded environment. The purpose of criteria should be to restore the environment to appropriate quality and maintain it there.

Slide 11: Also should account for different preparations. For example, dried fish represent a much larger portion size of uncooked fish than a fillet would. The key data are portions per time unit (e.g. week, month, year, etc.) and portion size in uncooked weight.

Slide 12: Not certain what "bx" stands for. I actually think 24 hour recall results might be more impacted by seasonality than FFQ results.

Here's what I used most recently to identify the pros/cons of the different methods

Method	Advantages	Disadvantages
FFQ	• Statistical analysis straightforward, FCRs immediately usable for AWQC • Data requirements lower than for NCI	• Uncertainty greater when recalling consumption over the course of a year

	• Can develop FCR for desired fish groups	
NCI	• Recall over 24 hours (“yesterday”) is more accurate than recall over longer periods • NCI FCR likely to be more accurate than FFQ	• Complex modeling required • More individuals and interviews needed relative to FFQ • Potential failure if not enough double hits are obtained • Inability to characterize FCR of fish groups for which sufficient double hits are not available

Note: Double hit is a case where an individual reports consumption of fish/shellfish on both 24 hour recall interview occasions.